

ForeSTalk



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THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA

**DEPARTMENT OF LANDS, FORESTS
AND WATER RESOURCES**

THE HONOURABLE ROBERT WILLIAMS
MINISTER

JOHN S. STOKES
DEPUTY MINISTER OF FORESTS

E. L. YOUNG
CHIEF FORESTER

A. G. DAGG
EDITOR

POLICY STATEMENT

The objective of the British Columbia Forest Service, as the forest administrative agency for the government of British Columbia, is to develop and enforce policies which will ensure for all time the proper balance of timber supply, forage production, forest recreation, wildlife protection and environmental preservation on the Crown forest lands of the province.

STAFF PHOTOGRAPHERS

Barbara Davies, Peter Robin,
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COVER PHOTO

Hundreds of lakes and streams, located deep in our forests provide seclusion and recreation for growing numbers of people



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Valley



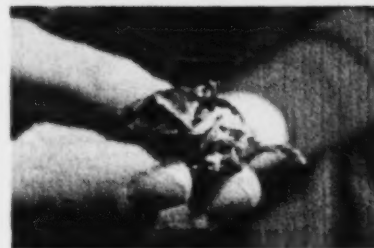
Integrated
Forest
Planning



Forest
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The
Eden Fire



Classroom
Visits
Forest



Looking north over top end of Ross Lake at low water
Canada-U.S. boundary crosses near centre of photo

Proposed raising of Ross Dam would extend reservoir
eight miles into Canada - to about foreground of photo.



An Armchair Visit to . . .

The Skagit Valley

By Ray Wormald

It's just another country road. It branches southward off the Trans-Canada Highway about two miles west of Hope in the majestic Fraser River valley. At the intersection an insignificant sign tells anyone who notices that it's the Silver-Skagit Road.

Every day of the year hundreds of people whiz by the narrow roadway - bound either to or from Vancouver, some 95 miles away. Very few realize that this inconspicuous country road winds its way nearly 50 miles to the Canada-U.S. border, and through some of the most beautiful and varied scenery found anywhere.

It leads into a vast region which over the past few years has become a focal point for a mixture of concern, intense study, controversy and international negotiations. It's the much-publicized Skagit Valley.

What brought this great stretch of river-valley land into the publicity spotlight? It's a long story and a complicated one. And getting more complicated as time goes on.

Before considering some of the pros and cons of the issues at stake, let's take an armchair journey into the heart of this wondrous valley through which the Skagit flows.

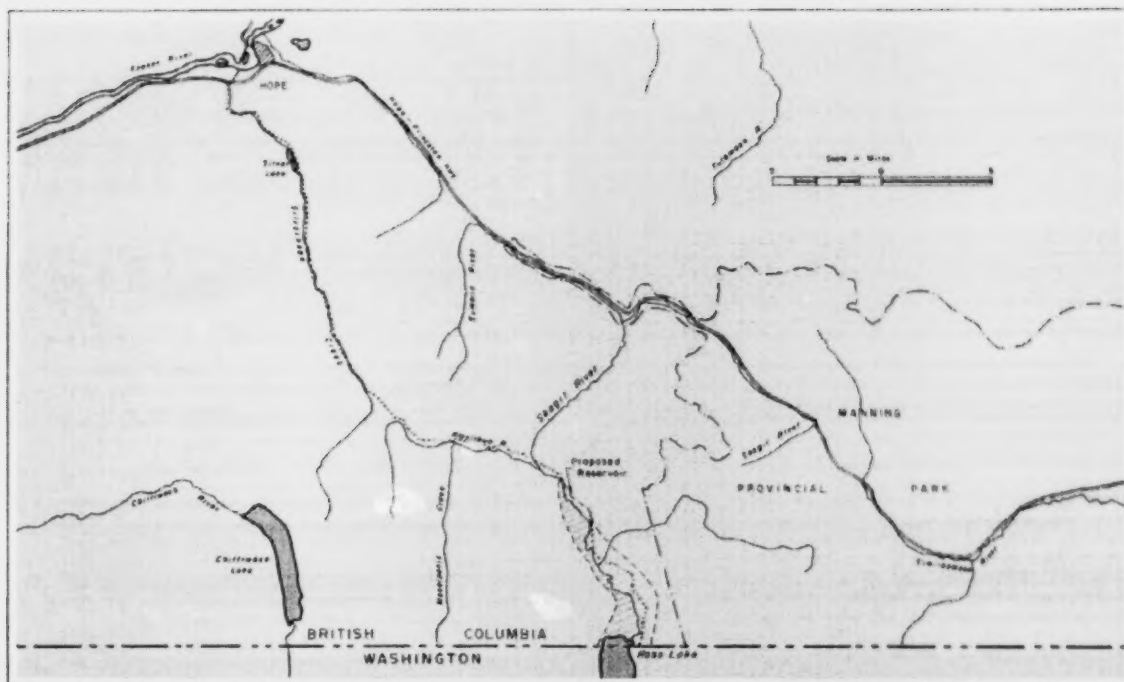
Bearing the name of a proud and vigorous American Indian band, the Skagit River originates in British Columbia's Manning Park. It carves its way southward through some 30 Canadian miles and just across the international boundary it flows into Ross Lake in Washington State.

Abundant Wildlife

Mountains ranging up to 8,000 feet look over many portions of the valley; and the entire region is home to a great variety of wildlife.

There are two distinct populations of deer. A black-tailed variety is found low in the valley, and Mule deer inhabit the higher eastern slopes. The valley's lakes and streams host several varieties of ducks, and on various occasions geese have been seen in the area. It's great grouse country, and the sprawling valley is a stop-over point for many species of water fowl on migration routes. A recent survey determined that no less than 44 species of birds wintered in the valley.

And that's just the beginning of the wildlife inventory. There are also beavers, bear, cougar, bobcats, raccoons, otter, mink, weasels, marten and skunk.



The Skagit rises in Manning Park and drains into Puget Sound.

Surprisingly, the variety and numbers of fish in the rivers and streams are apparently limited, although lower portions of the Skagit River (south of the border) contain numerous salmon spawning grounds. A crew using Scuba diving gear in the Canadian section of the waterway reported seeing only seven adult fish per mile of river. Catches of Rainbow trout and a few Dolly Varden char have been reported.

Plant Life Bountiful

Because of its mixed bag topography, with low-lying valley bottoms, alpine plateaus, and mountainous slopes, plant life of the entire region is widely varied and bountiful. And undoubtedly the "queen" of them all is the beautiful Pacific rhododendron. The plants grow either singly or in great clusters, and are found in numerous regions throughout the valley system. Some of the rhododendron patches are so thick it's almost impossible to penetrate them; and some are so large they look like trees. Normally in June they reach the peak of their bloom beauty, and many are the camera-packing visitors who venture off the Hope-Princeton Highway (at Manning Park) to enjoy the colorful show. The wild rhododendrons are protected by law in British Columbia, and it is illegal to dig up the plants or pick the flowers. Incidentally, did you know the rhododendron is a member of the heather family?

Because the region is less than 100 miles from the Pacific Ocean, rain is abundant - 30 to 40 inches annually. A winter

snowfall of more than five feet is not uncommon. Summertime temperatures range up to the 100-degree mark.

Logging in 1858

Records show that logging in the area was underway as far back as 1858 - initially providing rough timbers for mining operations triggered by the famous Fraser River gold rush. A limited number of loggers are still in the region, with Douglas fir, hemlock, cedar, cypress and spruce being the main commercial species.

A few enterprising men are finding it worth their while to return to areas logged many years ago. Those were wasteful days in the forest and huge, high stumps were common in the wake of logging operations. Many of them are cedar, still with much solid wood, and with today's demand for shingles and shakes they are literally treasures.

Several large portions of the valley region have been included in the province's reforestation program. Between 1970 and 1973 the B.C. Forest Service planted some 890,000 seedlings (mostly Douglas fir) on a total of 1,650 acres. The planting program proposed for this year involves about 230,000 trees on 460 acres.

Prime Recreation

These facts, together with a host of others, lead to one very firm conclusion: Because it is within fairly easy driving



A variety of wildlife, beautiful scenery and colorful vegetation make the valley appealing to visitors.

distance from big and rapidly expanding Vancouver, the entire Skagit River valley region is being regarded as a precious piece of real estate for recreational purposes.

And this is where we can refer to earlier mention of the valley now being the subject of much controversy and concern.

In a nutshell here's the situation: A hydro-electric complex below Ross Lake provides Seattle with much of its electrical power . . . and Ross Lake serves as the system's reservoir. Like most other places, the big Washington State city is growing. It needs more electricity.

To provide this, plans were made to raise the Ross Dam, which, in turn, would result in the flooding of some 6,000 acres in the Canadian portion of the Skagit River valley. Under the program, with the Ross Lake reservoir at full flood, the northern tip of the lake would extend about eight miles into Canada.

Initial agreements for the raising of the dam were made between Seattle Light and British Columbia's previous government. The province was to receive about \$34,500 annually from Seattle in return for the right to flood the Canadian portion of the Skagit Valley.

Voices of Protest

Proposals to raise the dam and flood a portion of the Canadian Skagit Valley were made years ago, but it was only in recent years that voices were raised in protest. Various

environmental groups claim the flooding will destroy much of the existing scenic beauties and features of the region, and have adverse effects on some of the area's wildlife.

The present government of British Columbia is strongly opposed to the flooding proposal. Resources Minister Robert Williams has observed that "... irreparable damage to the province will occur if the natural water level of the Skagit River at and above the international boundary is allowed to rise above its present level." The government is also studying the legality of some clauses of the flooding agreement. And in addition, there is deep concern about the actual related financial agreements made by the previous provincial administration.

However, there is another school of thought that favors the northward extension of Ross Lake some eight miles into Canadian territory. Its proponents claim the resultant waterway would be a great recreational asset, providing extensive facilities for boating, fishing, swimming, lakeside parks, trails, and a host of other outdoor values.

Because of its international implications, the flood-or-not-to-flood issue has involved federal agencies of both the United States and Canada, and, of course, Washington state and British Columbia. A number of hearings have been held to discuss pros and cons of the issue. The most recent sessions were held in April of this year, and there will undoubtedly be others.

So like the flow of the river itself, the saga of the Skagit continues.

All Resources Considered in Logging Plans

By
J.G. BULLEN, R.P.F.,
B.C. FOREST SERVICE

To make a reality of good land management and environmental protection, an effective forest planning system was pioneered in Prince George last year.

The new procedure involves a co-operative approach by B.C. Forest Service and Fish and Wildlife Branch personnel. Very broadly speaking, the foresters and biologists determine how the forest resource can be harvested with maximum operational economies and a minimum of degradation or disruption to the social and environmental values.

This joint planning system, now employed in the giant Prince George Forest District, requires inputs from zone foresters, fish and wildlife biologists and local industrial foresters. It is the zone foresters (Forest Service planners and administrators for specific areas within each Forest District) who assemble all available resource data before the actual planning begins.

The biologists contribute data and interpretations relative to wildlife, water and fisheries interests. The industrial foresters then plan the location, size, shape and orientation of cutting areas and roads in light of the resource data and management constraints.

To begin with the planners must know what resource values exist in the proposed logging area. They can hardly plan for the optimum use of the total resource before they have an inventory of the timber, soils, wildlife and fish habitats, recreation, agriculture, grazing, water and mining values. Fortunately, at least broad inventory data exists for all areas.

The zone forester collates and presents this information in a folio of maps. Each map is accompanied by written comments including any constraints which are to be taken into consideration by the industrial foresters who design the layout of cutting areas.

The following examples taken from an existing plan illustrate the principles involved in multiple use considerations.

Wildlife Considerations

The B.C. Land Inventory Capability Analysis Report delineates important ungulate wintering areas and other range areas of significant importance. The zone foresters

and biologists discuss these areas in detail. In view of the prime habitat values involved, they draft a general management objective, in this case, to maintain the habitat to which wild ungulates are ecologically adjusted consistent with maximizing the socio-economic returns to the public. They next draft constraints designed to achieve the objective: logging openings are not to exceed agreed acreages, and they are to be cut in specified shapes.

Habitats of other wildlife such as waterfowl and fur-bearers are also noted when information is available.

Fish Protection

The fish biologist lists the fish species inhabiting the various lakes and streams and designates the important spawning areas. In this case the management objective is to preserve and maintain the fish habitat with particular reference to spawning areas, stream bank vegetation, water temperature and siltation. He specifies that no logs, fill, obstructions or debris likely to cause pollution are to be deposited in the streams, and that no equipment is to be operated in the streams or gravel removed from them. He also specifies that stream crossings shall consist of a bridge or culvert sufficiently large to accommodate maximum stream flows and that construction of crossings shall not coincide with spawning dates.

The zone forester, in consultation with the biologist, specifies that tree growth occurring on unstable, erodible outbanks and leaning trees along water-courses shall remain uncut. Where the values are high the precautions necessary to have no siltation and to keep water temperature at the optimum level may necessitate long-term deferment of timber harvesting within 10 chains (660 feet) of the streams.

Recreation

The zone forester, who is also the forest recreation specialist, prepares a map showing the recreational resources and capability classes. Special consideration is given to logging and its effect on the environment, particularly in areas of high public use and/or high capability.

Typical objectives may be to maintain a

forest environment which will provide enjoyment and satisfaction for the public, and to facilitate the use of forest land and water for recreational purposes.

Watersheds

The stated management objective here is to control and preserve water quality through the application of appropriate watershed and streambank management policies and procedures. To achieve this, the zone forester decides that timber harvesting will be based on a system of alternate cut and leave patches designed to reduce the potential for excessive spring runoff and sediment load to the major creeks and rivers in the area. The degree of watershed protection depends on the soil types and slope. For instance, slopes greater than 40 percent may require smaller openings and special logging methods.

Other Factors

Now, with the foregoing multiple use considerations dealt with, the zone forester notes the other physical attributes of the area. Detailed soil information is of paramount importance in a meaningful harvesting plan. The zone forester, therefore, assembles the most detailed soil information available for the proposed harvesting area and interprets the data for forestry purposes.

For instance, well drained, relatively coarse-textured soils are at a premium in the Prince George Forest District. Hence, the logging planner must locate and designate these soils in order that a balanced year around logging operation can be conducted. Other interpretations are made for road construction problems, erosion problems, windthrow hazards, forest capability, species suitability, plant competition, site preparation and reforestation methods.

A forest cover map showing the tree species growing in the area is prepared next. The mapped timber types are colored according to cutting priority classifications with the over-mature, disease infected, insect infested or fire-damaged timber designated for early harvesting. And when very intensive management of an area is planned then a more complete ecological classifica-

tion based on vegetation must be undertaken. Indeed, local foresters are quick to point out that vegetation as one of the best expressions of the combined influence of all factors in the environment should not be overlooked.

The data presented thus far in the development plan indicates the multiple use considerations and the areas where ecological disturbance must be minimized for resource protection. For instance, in the case of moose there must be minimal disturbance of prime wintering areas, forest cover adjacent to water bodies and treed corridors to enable the animals which feed in the more open deciduous growth to escape with ease to the protection of the coniferous forest.

For waterfowl there must be maintenance of marshes. For recreation there must be maintenance of forest cover in high use, high capability areas, and consideration of aesthetic values. For fish there must be maintenance of streambank vegetation and high elevation forests to prevent siltation and to ensure uniform waterflow.

Sensitive Areas

A further step prior to the actual planning is to designate explicitly the sensitive areas where harvesting must be deferred until either more intensive development plans can be prepared and/or logging technology will ensure a minimum of ecological disturbance. Often, especially during the opening up of new areas, existing access does not permit a careful on-the-ground examination of such areas. On the other hand, once access has been developed, more detailed planning can be undertaken.

Sensitive areas include those areas adjacent to swamps, lakes, streams, the special habitat areas for wildlife and fish, areas adjacent to and visible from important recreational areas, areas of highly erodible soils, and high elevation areas where natural regeneration cannot be readily obtained following logging.

Another major consideration in the deferred area map is the protection of the resource against fire losses. It is frequently necessary to maintain standing green timber as "breaks" against uncontrolled fire from

sweeping across the development areas. Often this latter requirement is met by augmenting the deferred areas with the inclusion of additional areas of fire resistant timber.

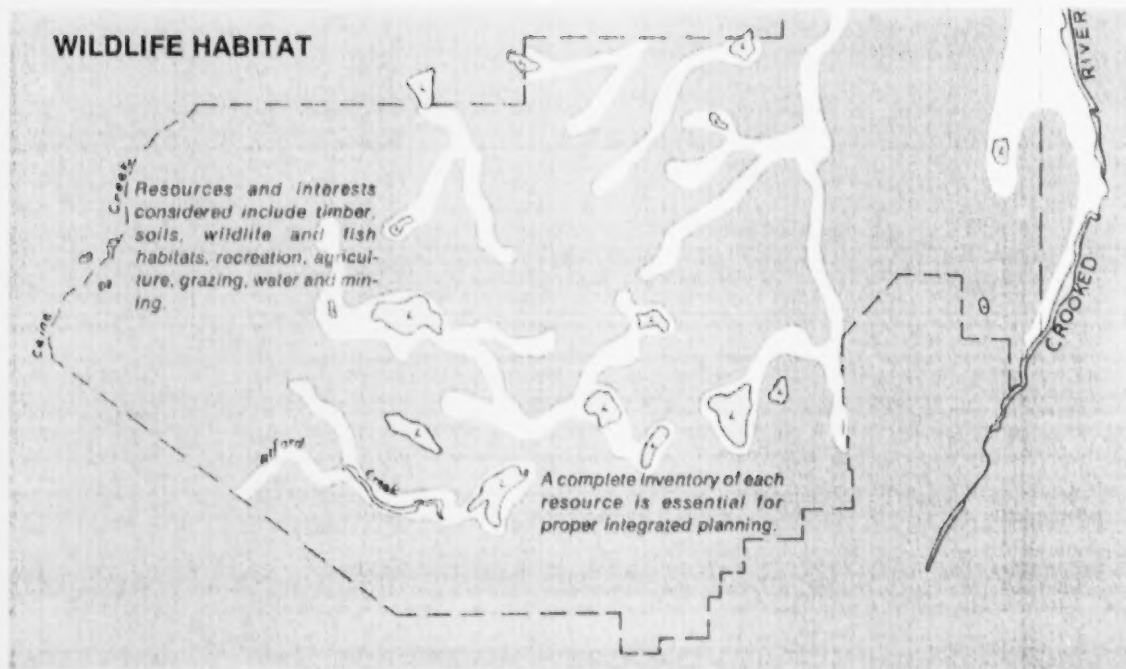
Deferred logging areas or greenbelts become then one of the most important elements in the resource plan, especially when they are established with the multiple use concept in mind.

At this point the industrial forester puts on the planner's hat. He now has the onerous job of planning the location of harvesting areas, road network, and the major construction projects such as culverts, bridges and recreation improvements. All proposed development must, of course, be consistent with the presented objectives and constraints. He must present summaries of planned acreages and timber volumes. And lastly, he must state what specific steps will be taken to restock the logged sites. When his planning is completed, the zone foresters and biologists make a final check of the completed plan before recommending its approval (see illustrations pages 8-9)



Wildlife, agriculture, timber, watersheds, fish habitats, soils and recreation are among the values considered in logging plans.

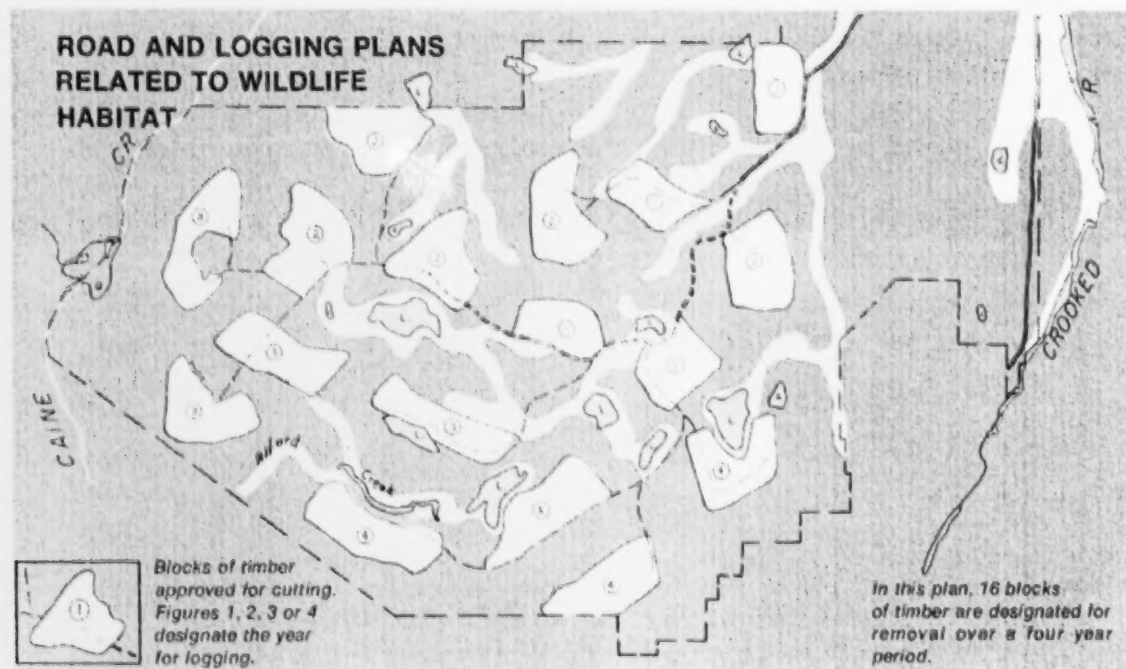




Essential winter range land for moose. Logging restricted. Road construction to be avoided but may cross at right angles if necessary.

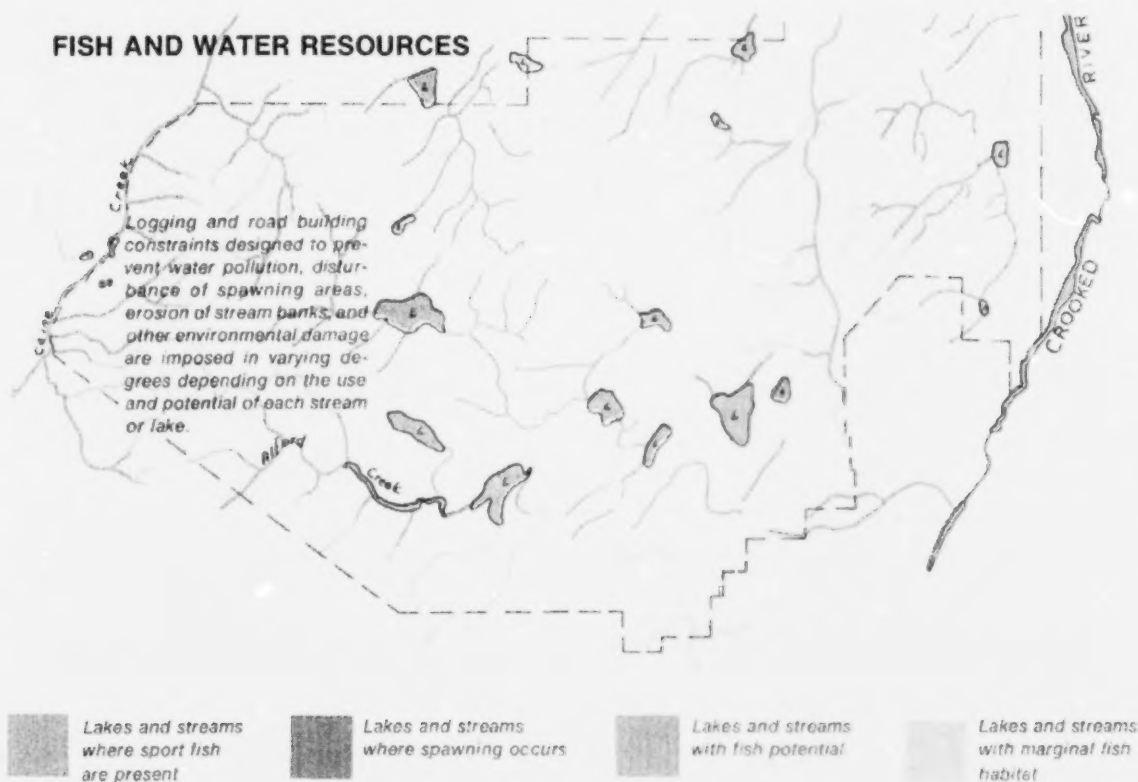
Moderately high value moose habitat. Logging restricted to 200 acre blocks. Roads to be kept to a minimum.

Moderate moose habitat. Logging restricted to 200 acre blocks with common topographical features. Minor restrictions on roads.



INFORMATION TO LOGGING PLANS

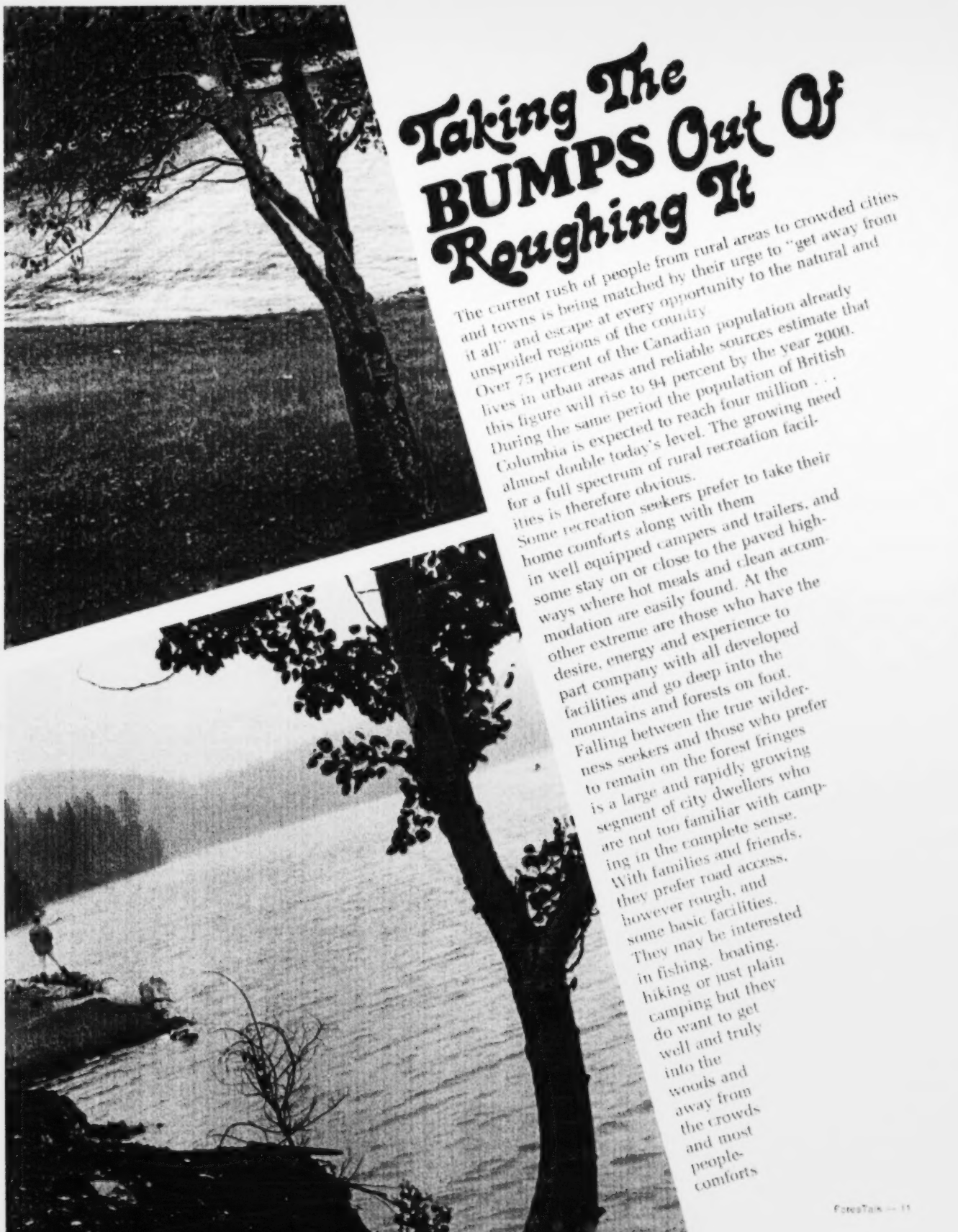
FISH AND WATER RESOURCES



ROAD AND LOGGING PLANS RELATED TO FISH AND WATER RESOURCES







Taking The BUMPS Out Of Roughing It

The current rush of people from rural areas to crowded cities and towns is being matched by their urge to "get away from it all" and escape at every opportunity to the natural and unspoiled regions of the country.

Over 75 percent of the Canadian population already lives in urban areas and reliable sources estimate that this figure will rise to 94 percent by the year 2000. During the same period the population of British Columbia is expected to reach four million . . . almost double today's level. The growing need for a full spectrum of rural recreation facilities is therefore obvious.

Some recreation seekers prefer to take their home comforts along with them in well equipped campers and trailers, and some stay on or close to the paved highways where hot meals and clean accommodations are easily found. At the other extreme are those who have the desire, energy and experience to part company with all developed facilities and go deep into the mountains and forests on foot. Falling between the true wilderness seekers and those who prefer to remain on the forest fringes is a large and rapidly growing segment of city dwellers who are not too familiar with camping in the complete sense. With families and friends, they prefer road access, however rough, and some basic facilities. They may be interested in fishing, boating, hiking or just plain camping but they do want to get well and truly into the woods and away from the crowds and most people-comforts

This is the group for which the B.C. Forest Service is developing a network of forest recreation facilities. They are not intended to compete with established tourist services or with parks. Rather, they are designed to complement them and provide some basic services where they did not exist before.

Survey Conducted

In 1970, a province-wide survey was conducted to determine forest recreation potentials and their locations, where the travellers want to go and what they want in terms of developments when they get there. In addition, the scope of the project had to be related to the resources provided for it by the government in terms of men and money.

After a period of organization and planning, the Forest Service started the field work in 1972-73. Over 600 recreation sites were developed throughout the province in that period. For some that had been in fairly heavy use before, a good cleanup and the installation of a toilet and garbage cans were sufficient. In others, picnic tables and fire-pads were added.

Natural State

Summing up the Forest Service approach to the project, Recreation Forester Harry N. Marshall stated: "We are working on the principle that our recreation sites should be kept as much in the natural state as possible. We are stressing health and sanitation measures. Public safety is also an important concern and leads to the

removal of leaning trees, provision of off-highway parking areas and the up-grading of hazardous sections of road.

He went on to say: "We have also built a number of boat launching ramps, foot bridges, trails and directional signs where they were needed." Much of this type of work is performed by students during the summer season.

Access to the forest depths is most important. By far the most widely used is the network of logging roads, built largely by logging companies. Many of them were not designed to accommodate both logging trucks and public vehicles at the same time so some limitations on public usage are sometimes essential in the interests of safety.

The times during which any particular road is open to the public can normally be learned from the local Forest Ranger. Even when access restrictions are necessary, they are usually lifted on weekends and after work ceases each evening. Occasionally, in times of high fire hazard, complete closure may be imposed.

Program Expanding

Reflecting the growing interest and use of forest recreation facilities, substantial funds have been provided by the B.C. government for further development this year and the 1974 program is already well underway.

By the end of 1974, developed and installed facilities will include: 905 recreation and camp sites, 2,443 litter barrels, 1,118 toilets, 470 firepads, 167 boat launching ramps, a great many

signs, over 1,000 picnic tables and other items. In addition, many miles of hiking trails are being opened through attractive country and at least two canoe routes are being developed and mapped.

Public response to the provision of these rather remote and rustic facilities has been very favourable. Usage rose from about 153,000 visitors in nearly 56,000 vehicles during 1972 to at least 385,000 visitors in 1973. Over half a million are expected to take advantage of these cost-free services this year.

With the program expanding so rapidly, it has not yet been possible to produce a single list or catalogue of all such facilities in the province. However, efforts are being made to prepare a series of pamphlets, each containing the pertinent information for a limited area, usually one of the 100 ranger districts.

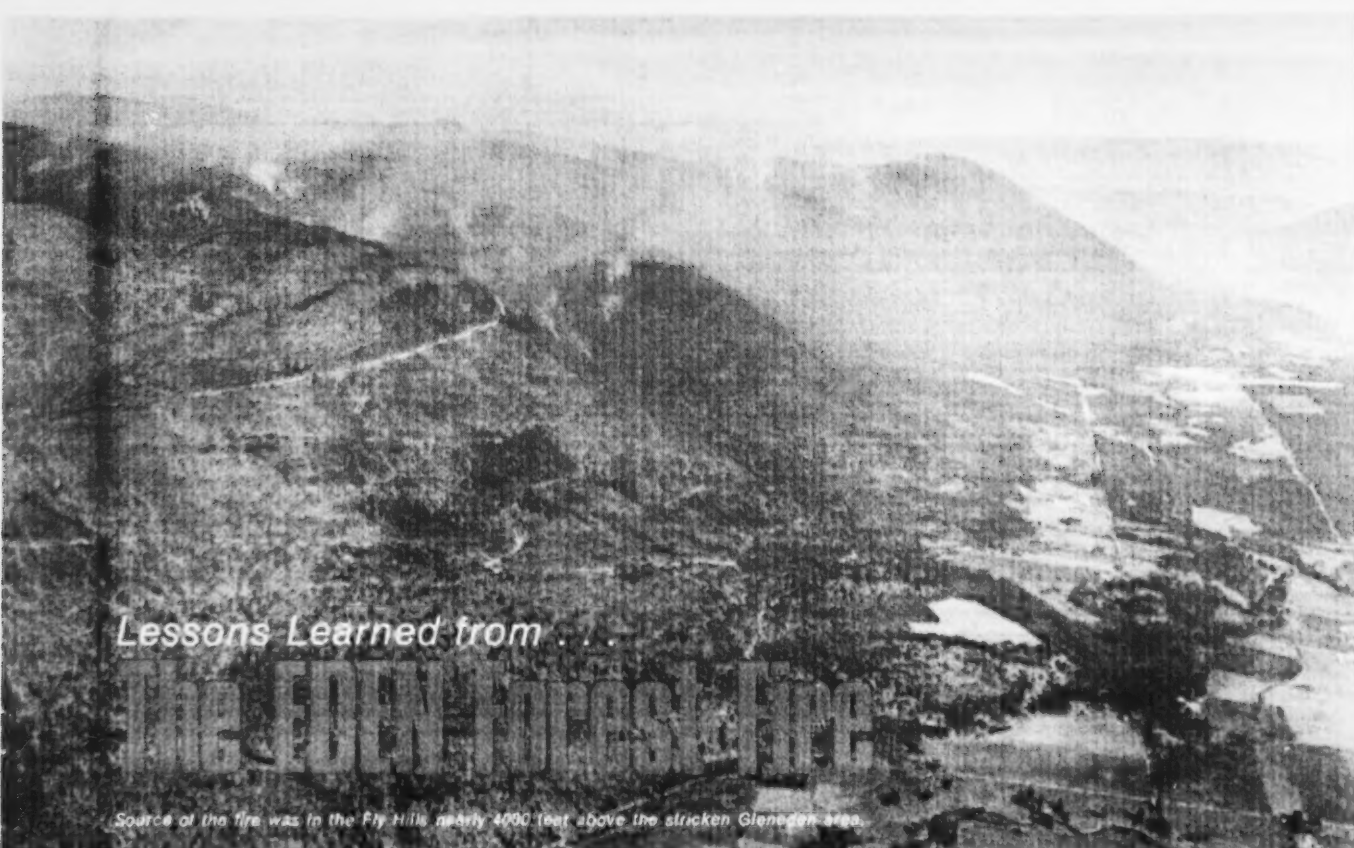
Rangers Will Help

When available, they may be obtained from the office of the forest ranger in the area of interest. Even when brochures are not available, the ranger's staff will provide information orally.

The Forest Service is not alone in its efforts to provide this service for the public. Perhaps less ambitious but similar programs have been initiated by several big logging companies in recent years and others will probably follow the lead.

In fact, a whole new vista of opportunity has been opened for the forest recreationist and it will be widened as the demand grows. ▲





Lessons Learned from . . . The EDEN Forest Fire

Source of the fire was in the Fly Hills nearly 4000 feet above the stricken Gleneden area.

"The EDEN FIRE may not have been earth-shaking but people-shaking it definitely was. It was a disaster with all the chaos and fear and dazed feelings of helplessness that arise in people who witness a forest fire that sweeps out of control towards them and for which they are unprepared."

So reads the introductory paragraph of the very thorough Eden Fire report prepared for Resources Minister Robert Williams by consultant Doctor D.B. Turner, former B.C. Deputy Minister of Recreation and Conservation, and three associate consultants from the Faculty of Forestry of U.B.C.

Events leading to the Eden Fire really extend over several days but the critical part of it was confined to a few hectic hours when the natural elements took full advantage of man's letdown and struck with speed and fury.

Until the early afternoon of September 11, 1973, the remnants of nine two-week-old prescribed slash burns in the Fly Hills west of Salmon Arm posed no serious control problem. But they were not mopped up as they should have been and events soon proved it.

At 3:30 p.m., southwest winds associated with an approaching cold weather front began to increase. By 4:25 p.m. they were estimated at 30 m.p.h. and soon after reached 40-50 m.p.h.

Smoldering remains of the dying slash burns and some recent minor "escapes" into surrounding areas of older slash were soon fanned into flames and pushed rapidly across the 5,000-foot-high Fly Hills plateau on a solid front.

Even then, all those who saw the fire believed it would move to the northeastern edge of the plateau and stop. Fires burn up steep slopes but not down - or so they thought. But they were wrong.

The Forest Service Review Board stated in the conclusions of its report that, "We believe that even the most experienced fire manager would not have foreseen the peculiar combination of wind, topography, time of day and fuel distribution that drove the fire down off the plateau" and into the Gleneden area nearly 4,000 feet below.

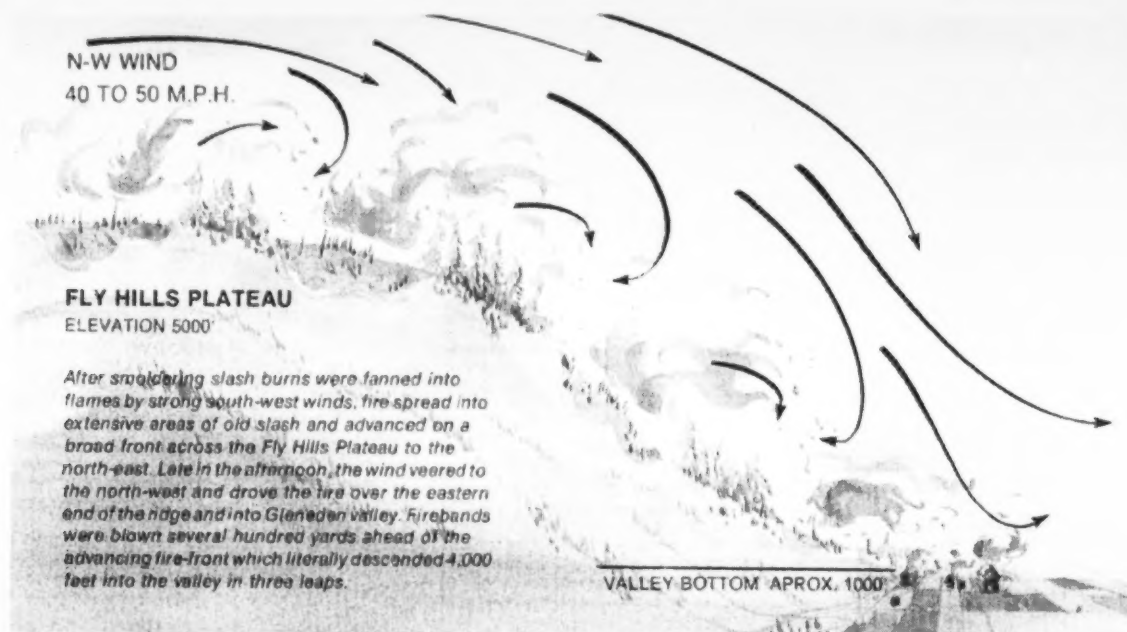
Before dawn the next morning, 16 houses and several other buildings had been destroyed. Before the fire was brought under full control it had burned an area exceeding 16,000 acres.

During September 12, the Forest Service placed 571 men on the fire lines with 22 bulldozers, helicopters, tank trucks, pumps and other equipment. But it was too late. The serious damage had been done and the toll was indeed great.

Recorded losses in terms of homes, barns and other buildings burned, machinery ruined, and damage suffered in orchards, gardens, woodlots, and in the soil itself reached the million dollar mark. To this must be added more than half a million dollars for fire-fighting as well as an indeterminate amount for timber burned.

Then too there is the legacy of problems related to the fire's effect on land values, water supply, soil erosion, recreation, wildlife, aesthetics, and other factors of vital

Strong Winds Drove Fire Off Plateau Into Valley



importance to the victims and the community as a whole.

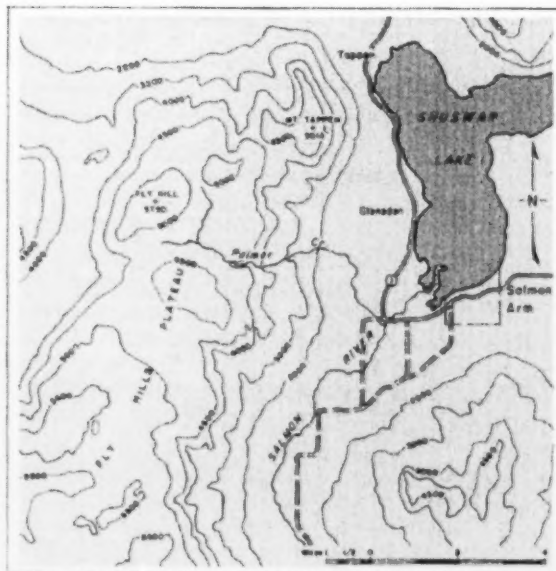
On September 12, the premier of B.C. declared Gleneden a "disaster area". Mobile homes and trailers were purchased and set up on the victims' properties by the Forest Service. Damages were appraised and cleanup started.

A crash program of rehabilitating the burned forest area was launched and 45 tons of grass seed was sown by aircraft to stabilize the burned-over soil and prevent serious erosion on steep slopes. Steps were taken to ensure a water supply for the local residents and many other measures have been initiated or planned.

"Fault for the Eden Fire," according to the Turner Report, "must rest at the doors of both the company concerned, The Federated Co-operatives Ltd., of Canoe B.C. (which had been logging in the Fly Hills for several years and which had set nine slash fires on August 28, 29 and 30 under permit from the Forest Service) and the Forest Service." The Forest Service Review Board reached the same conclusion.

Of much greater importance, the Turner Report identifies a clear requirement for greater use of existing knowledge in prescribing and executing slash burns. It recommends extended fire-management training for personnel, more rigid rules for burning and stricter enforcement of them. It advocates extensive research into the "pros" and "cons" of slash burning under diversified conditions and it stresses that the potential benefits and detriments of the practice are highly variable.

Among the factors listed which determine the merits of burning are "altitude, slope, aspect, soil type, vegetation, climate, slash condition, time of year, insect and disease



Eden Fire Area



Buildings on the forest fringe were particularly vulnerable

conditions, desired species of regeneration, and the existence of important fish streams." The report also adds that, "In some situations benefits greatly outweigh the detriments; in others the reverse is true."

After making thorough independent reviews of the history of slash burning in B.C., its status in related regions, its environmental impacts, and of the Eden Fire itself, the consultants agreed on two general conclusions. They were:

"That it would be against the best interest of the Province of B.C. to ban slash burning," and

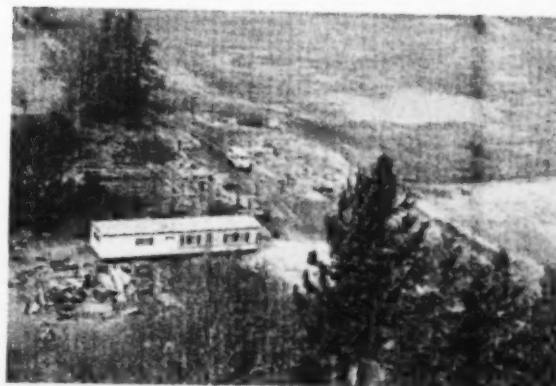
"That a major initiative is required to develop the understanding of how, when and where slash burning should be conducted."

High among Dr. Turner's longer co-ordinated list of conclusions as drawn from all studies undertaken by his committee was the one which stated: "There can and may be further and more disastrous 'Eden Fires' through the southern interior of B.C. because of the rapidly increasing volume of slash over this region of the province. This possibility becomes frightening when it is recognized that, year by year, more and more people are settling farther and farther out from established community centers into the fringes of the forest and often close to areas of unburned slash."

In this, victims of the Eden Fire can take little or no comfort, but if the provincial government, the Forest Service, the forest industry and other agencies act promptly and wisely on the recommendations of the Turner Report and the Forest Service Review Board, then the probability of another runaway slash fire will be greatly reduced.



Survival of this home was due in part to fire retardant (red) spread by air tanker



Mobile homes were hastily set up on victims' properties by Forest Service



Miles of fire guard were created

A Classroom Goes To The Forest



What do you know about Santa Maria Lake?

Very little? Nothing?

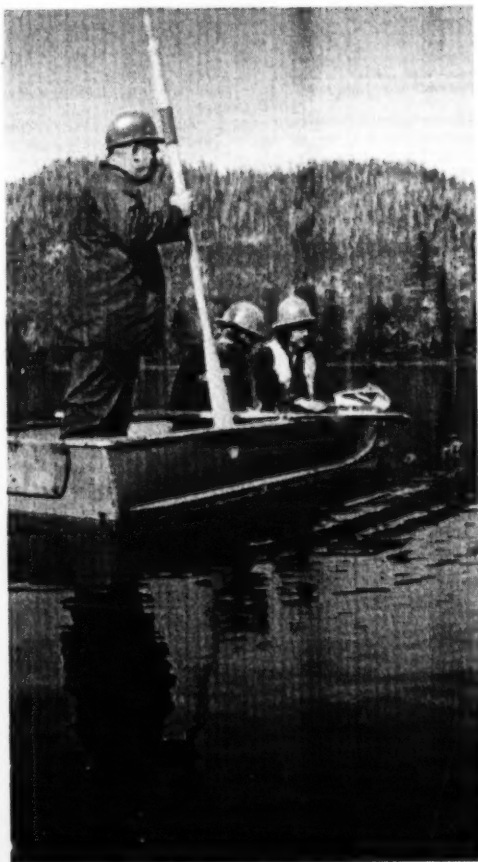
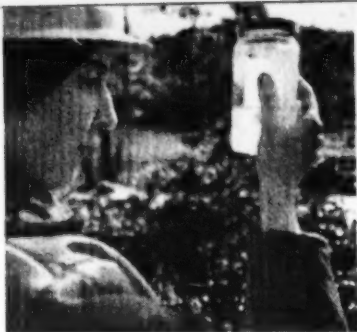
Well, don't feel too badly, because until recently no one really knew anything about the little sausage-shaped body of water. A few loggers knew it was there.

"There" is about 12 miles southeast of Kelsey Bay - some 50 miles "above" Campbell River on the east coast of Vancouver Island. The lake covers 30 acres, give or take a few gallons, and nestles between gently sloping mountains which over the years have heard the whine of power saws and the rumble of heavily laden logging trucks. Today the slopes are giving birth to a new forest, some of the young firs and hemlock are already at the 10 to 12-foot mark. The peaceful

area is about 1,000 feet above sea level, and within uncomfortable walking distance from the White and Adam Rivers.

Today a great deal is known about Santa Maria Lake, thanks to the work and enthusiasm of 26 students of the Campbell River Jr. Secondary School, environmental studies class teachers Robert Mills and Stanley Ritchie, the provincial Fish and Wildlife Branch, and the Kelsey Bay division of MacMillan Bloedel Co. Ltd.

Late in April of this year the students (10 of them girls) studied and researched the small lake in a unique and promising program of teamwork which involved the school, government departments and industry. Results have been rewarding to everyone concerned.



Samples and specimens were gathered from lake, streams and surrounding forests.

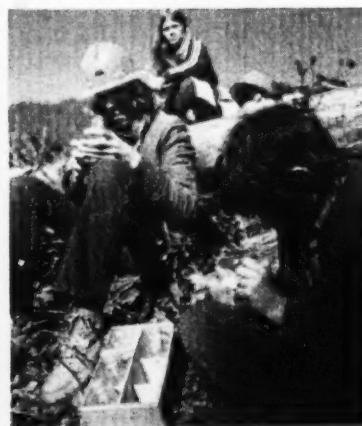
Armed with "lab" equipment from their school, notebooks, cameras, a small fleet of rowboats, fishnets, and a generous measure of dedication, the Grade 9 and 10 students spent three days collecting a wealth of detailed data about the lake. They analyzed water samples, mapped the shoreline, set fish nets, studied the lake's one outflow stream and took samples of material from the bottom. They drew maps and took photographs, determined recreational values of the area, checked temperatures . . . in short they learned, and recorded, a great deal about the chemical, biological and physical aspects of Santa Maria Lake.

In the evenings they set up "lab" workshops in one of the logging company's former lecture rooms and consolidated

each day's findings.

They confirmed that the lake region was home to a great variety of wildlife - deer, elk, Canada geese, beaver, muskrat, and a significant gathering place for many birds, including loons. And they also made a "negative" confirmation - that beautiful Santa Maria Lake didn't host any fish. That was one of the many things the Fish and Wildlife people wanted to know, and whether or not conditions of the lake would support a fish population.

Thanks to the student survey it is now planned to stock the lake with upwards of 50,000 cutthroat trout fingerlings this fall. The infant fish (only several months old) will come from the Fish and Wildlife Branch's hatchery at Abbotsford.



Mobile "lab" was used to analyse each day's collections.

And because of the Campbell River students' initial participation, it is intended that they take part in the follow-up action and help in the actual fish stocking operation.

The entire project was one of commendable teamwork in which Fish and Wildlife personnel organized and directed, young citizens were actively involved, and MacMillan Bloedel Co. Ltd. provided meals and transportation. The students paid for their own accommodation at a Kelsey Bay hotel.

The students also joined in a tree planting project on recently logged-over land overlooking the lake. They planted fir seedlings there, and later established some young

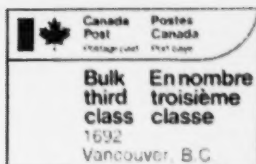
cottonwood trees along the banks of the lake's outflow stream. Later they witnessed logging, log dumping and road building operations.

Environmental studies teacher "Bob" Mills was delighted with the results of the lake study session. "Everybody gained a great deal . . . the Fish and Wildlife people, the industry, and certainly the students."

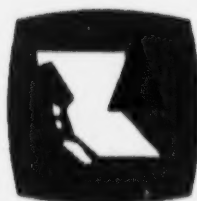
"There is no reason why similar studies can't be carried out all over the province - involving various agencies and government departments which are all vitally concerned with matters pertaining to our overall environment." ▲

By R.W.





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